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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
10 066,598	02 06 2002	Makoto Okabe	33082M0231	5428

441 7590 10 01 2002
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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 10 01 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

FILE COPY
Office Action Summary

Application No.

10/066,598

Applicant(s)

OKABE ET AL.

Examiner

Sylvia R MacArthur

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 11-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,355,109. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the application and the patent claim a vacuum processing apparatus for applying a designated process to an object to be processed in a vacuum atmosphere, wherein the apparatus comprises a processing vessel, a susceptor, a toroidal shaped vacuum pump (exhaust means turbomolecular pump) including a motor that is located below the susceptor, and a driving mechanism that moves the susceptor up and down. This motor includes a stator and a rotor.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. *Claims 11- 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Os et al (USP 5,792,272) in view of Shinjiro.*

Van Os teaches plasma enhanced chemical processing reactor 10 includes a process chamber 16. The process chamber (vessel, 16), which is attached to and communicates with plasma assembly 11. Within the process chamber 16 is wafer support (susceptor, 20), which supports a wafer 24 to be processed. The wafer support 20 is substantially aligned with the axis of process chamber 16. Positioned beneath the wafer support 20 and substantially axially aligned with the axis of the process chamber 16 is a (vacuum) pump 26. Van Os teaches this "on-axis" pumping promotes symmetrical flow of gases within reactor 10. Pump 26 is a turbo pump (turbomolecular) as discussed in col. 9 lines 56-67.

A vacuum system is provided for exhausting the reactor 10. A vacuum pump 26 is operatively coupled to the process chamber 16 by port 25. The exhaust port communicates with the pump and opening to the interior of the processing vessel, wherein the port is arranged in the floor of the vessel annularly and uniformly. Note the port is also arranged around the susceptor for mounting the substrate thereon.

The wafer 24 is lowered onto and raised from the support surface 52 by a lifting assembly (not shown).

Van Os fails to disclose the specific structure of the vacuum pump.

Shinjiro discloses a turbomolecular vacuum pump 1 having stator blades within a casing 2 in an axial direction thereof, and rotor blades 11 which are located between respectively adjacent stator blades 10 and are mounted on an outer periphery of a rotor situated centrally to the casing. A motor rotor (driving mechanism) 17 is fixed to a rotating member that is formed of the rotor

having the rotor blades fixed to the outer periphery, and a motor stator 18. Opposite to the motor rotor is arranged so as to construct the drive mechanism for the rotating member.

The turbomolecular pump includes a casing 2 with a suction port 3 that is adapted to be disposed in from of another vacuum device (not shown).

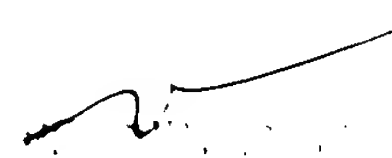
The motivation to use a turbomolecular pump structured as Shinjiro teaches is that it exhibits excellent evacuation performance in a molecular flow region, and is achieve the high degree of vacuum required in semiconductor process vessels.

Therefore, it would have been obvious by one of ordinary skill at the time of the claimed invention to provide the pump of Van Os with the structure and components discussed in Shinjiro.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Sylvia R MacArthur
703-306-5690